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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/700,712

DATE: 01/19/2002

TIME: 11:55:42

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C--> 12 <141> CURRENT FILING DATE: 2001-11-13

4 <110> APPLICANT: SBL Vaccin AB
 6 <120> TITLE OF INVENTION: Method of producing thy A- strains of Vibrio cholerae,
 7 such strains and their use.
 9 <130> FILE REFERENCE: 29772
 11 <140> CURRENT APPLICATION NUMBER: US 09/700,712
 12 <141> CURRENT FILING DATE: 2001-11-13
 14 <150> PRIOR APPLICATION NUMBER: SE 9801852-6
 15 <151> PRIOR FILING DATE: 1998-05-26
 17 <160> NUMBER OF SEQ ID NOS: 5
 19 <170> SOFTWARE: PatentIn Ver. 2.1
 21 <210> SEQ ID NO: 1
 22 <211> LENGTH: 2909
 23 <212> TYPE: DNA
 24 <213> ORGANISM: Vibrio cholerae
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 29 tgctatgtgg ttggccaatc gccgagcgga tcgcgcgggc agtggttggg cgcgtgagca 180
 30 agtctctgac ttgttattcg ccggtttttt aggtgtagtg atcgggtggc gagttgggta 240
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 33 tgcgcgtaaa aaccaacgca ccttctttgg tgtggccgat tttgttgccc ctttagtgcc 420
 34 attcggtttg gggatgggac gtatcggtaa ctttatgaat agtgaacttt ggggacgagt 480
 35 aacggatgtg ccttggggtt ttgtattccc taatgggtgg ccactgcgc gccatccttc 540
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 51 gatggcacag atcacagga aaaagccggg cttggcgat cacaagatcg tcaatgcgca 1500
 52 catttacca gatcaactcg aattgatgcg cgtgtgagc ctaaaacgtg agccattccc 1560
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 54 cactttggat gattttgacg tcaccggata tcagttccac gatcctattc aataccggtt 1680

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56 cgaaggctcg gagctttttt tatacagatg atgctttaac gcttaagcgg ttagggcaag 1800
57 aatgctgccg gggatgacga caaacacacc caataagtaa ctcaccacca ccattttgct 1860
58 cttacaagcc caagttgaga tgagctcagc acctttaata ggcagttcgc gtaagaaagg 1920
59 aataccgtaa atcaagaccg tagccatcaa gttaaagctt aagtgcacca gcgcaatttg 1980
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68 taaaatgcca aacatcattt ctgaggttag gaagatcagc accgcgagaa gattgaaaaa 2520
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73 agcaaattca aatagaactt tggcttgatc gccggttgcc catttaaac cgctgccgac 2820
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81 <213> ORGANISM: Vibrio cholerae

83 <400> SEQUENCE: 2

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86 tgctatgttg ttggccaatc gccgagcggc tcgcgcgggc agtggttga cgcgtgagca 180
87 agtctctgac ttgttattcg ccggtttttt aggtgtagtg atcggtgccc gagttggtta 240
88 tgtgatcttc tacaattttg atctgttctt tctgaccctt ctttatttat tcaaagtgtg 300
89 gactggcggc atgtccttcc acggcggtt attgggtgtg atcacgcca tgttctggtta 360
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91 attcggtttg gggatgggac gtatcggtaa ctttatgaat agtgaacttt ggggacgagt 480
92 aacggatgtg ccttgggctt ttgtattccc taatgggtgg ccactgccgc gccatccttc 540
93 acagctttat gaattcgctt tagaaggcgt ggttctgttc tttattctta attggtttat 600
94 tggtaaacct cgtccgctag gcagcgtatc cggactgttt ttagctggat acggtacatt 660
95 ccgcttcctt gtggaatacg tccgtgagcc agatgctcag ttgggtctgt ttggtggctt 720
96 catttcaatg gggcaaatcc tctccttacc tatggtgatc atcggtattt tgatgatggt 780
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103 <213> ORGANISM: Vibrio cholerae

105 <400> SEQUENCE: 3

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108 ccggggatga cgacaaacac acccaataag taactcacca ccaccatttt gctcttaca 180
109 gcccaagttg agatgagctc agcaccttta ataggcagtt cgcgtaagaa aggaataccg 240

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112 atgttcgcac ctaaggtaaa tgggtagatt tcacgcactt tcagcacgcc agagcccacg 420
113 agaggaacca ttaggctggt tgtggctgat gaagattgaa ctaataccgt aaccactgta 480
114 cctgaagcaa taccgtgtag tgggcctcgg ccaatcgcat ttgtagaat ttcacgtgcg 540
115 cggccaacca tcaaaactct catcagtttg cccatcaccg taatggcgac gaaaatggtc 600
116 gcaataccca atacgataag tgcgacacca ccgaaagtat taccgaatac cgaaagctgg 660
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118 ctcatatcgc cagtcgcaag cagaggcgaa acgagccagt gtgagacttt ctctaaaatg 780
119 ccaaacaatca tttctagagg taggaagatc agcaccgcga gaagattgaa aaaatcgctg 840
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121 acgagagtat tggtcacagt agtaccaata ttggcaccga tcaccatagg aatcgcggtt 960
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124 tcaaatagaa ctttggttg atcgccggtt gccatttaa aaccgctgcc gaccatcgcg 1140
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130 <211> LENGTH: 283
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132 <213> ORGANISM: Vibrio cholerae
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136 1 5 10 15
138 Trp Val Glu Asn Glu Arg Thr Gly Lys Arg Cys Leu Thr Val Ile Asn
139 20 25 30
141 Ala Asp Leu Thr Tyr Asp Val Gly Asn Asn Gln Phe Pro Leu Val Thr
142 35 40 45
144 Thr Arg Lys Ser Phe Trp Lys Ala Ala Val Ala Glu Leu Leu Gly Tyr
145 50 55 60
147 Ile Arg Gly Tyr Asp Asn Ala Ala Asp Phe Arg Gln Leu Gly Thr Lys
148 65 70 75 80
150 Thr Trp Asp Ala Asn Ala Asn Leu Asn Gln Ala Trp Leu Asn Asn Pro
151 85 90 95
153 Tyr Arg Lys Gly Glu Asp Asp Met Gly Arg Val Tyr Gly Val Gln Gly
154 100 105 110
156 Arg Ala Trp Ala Lys Pro Asp Gly Gly His Ile Asp Gln Leu Lys Lys
157 115 120 125
159 Ile Val Asp Asp Leu Ser Arg Gly Val Asp Asp Arg Gly Glu Ile Leu
160 130 135 140
162 Asn Phe Tyr Asn Pro Gly Glu Phe His Met Gly Cys Leu Arg Pro Cys
163 145 150 155 160
165 Met Tyr Ser His His Phe Ser Leu Leu Gly Asp Thr Leu Tyr Leu Asn
166 165 170 175
168 Ser Thr Gln Arg Ser Cys Asp Val Pro Leu Gly Leu Asn Phe Asn Met
169 180 185 190
171 Val Gln Val Tyr Val Phe Leu Ala Leu Met Ala Gln Ile Thr Gly Lys
172 195 200 205
174 Lys Pro Gly Leu Ala Tyr His Lys Ile Val Asn Ala His Ile Tyr Gln

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175      210      215      220
177 Asp Gln Leu Glu Leu Met Arg Asp Val Gln Leu Lys Arg Glu Pro Phe
178 225      230      235      240
180 Pro Ala Pro Gln Phe His Ile Asn Pro Lys Ile Lys Thr Leu Gln Asp
181      245      250      255
183 Leu Glu Thr Trp Val Thr Leu Asp Asp Phe Asp Val Thr Gly Tyr Gln
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186 Phe His Asp Pro Ile Gln Tyr Pro Phe Ser Val
187      275      280
191 <210> SEQ ID NO: 5
192 <211> LENGTH: 271
193 <212> TYPE: PRT
194 <213> ORGANISM: Vibrio cholerae
196 <400> SEQUENCE: 5
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200 Ser Ile Gly Pro Leu Ala Val Arg Trp Tyr Gly Leu Met Tyr Leu Val
201      20      25      30
203 Gly Phe Leu Phe Ala Met Trp Leu Ala Asn Arg Arg Ala Asp Arg Ala
204      35      40      45
206 Gly Ser Gly Trp Thr Arg Glu Gln Val Ser Asp Leu Leu Phe Ala Gly
207      50      55      60
209 Phe Leu Gly Val Val Ile Gly Gly Arg Val Gly Tyr Val Ile Phe Tyr
210 65      70      75      80
212 Asn Phe Asp Leu Phe Leu Ala Asp Pro Leu Tyr Leu Phe Lys Val Trp
213      85      90      95
215 Thr Gly Gly Met Ser Phe His Gly Gly Leu Leu Gly Val Ile Thr Ala
216      100      105      110
218 Met Phe Trp Tyr Ala Arg Lys Asn Gln Arg Thr Phe Phe Gly Val Ala
219      115      120      125
221 Asp Phe Val Ala Pro Leu Val Pro Phe Gly Leu Gly Met Gly Arg Ile
222      130      135      140
224 Gly Asn Phe Met Asn Ser Glu Leu Trp Gly Arg Val Thr Asp Val Pro
225 145      150      155      160
227 Trp Ala Phe Val Phe Pro Asn Gly Gly Pro Leu Pro Arg His Pro Ser
228      165      170      175
230 Gln Leu Tyr Glu Phe Ala Leu Glu Gly Val Val Leu Phe Phe Ile Leu
231      180      185      190
233 Asn Trp Phe Ile Gly Lys Pro Arg Pro Leu Gly Ser Val Ser Gly Leu
234      195      200      205
236 Phe Leu Ala Gly Tyr Gly Thr Phe Arg Phe Leu Val Glu Tyr Val Arg
237      210      215      220
239 Glu Pro Asp Ala Gln Leu Gly Leu Phe Gly Gly Phe Ile Ser Met Gly
240 225      230      235      240
242 Gln Ile Leu Ser Leu Pro Met Val Ile Ile Gly Ile Leu Met Met Val
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245 Trp Ser Tyr Lys Arg Gly Leu Tyr Gln Asp Arg Val Ala Ala Lys
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VERIFICATION SUMMARY

PATENT APPLICATION: US/09/700,712

DATE: 01/19/2002

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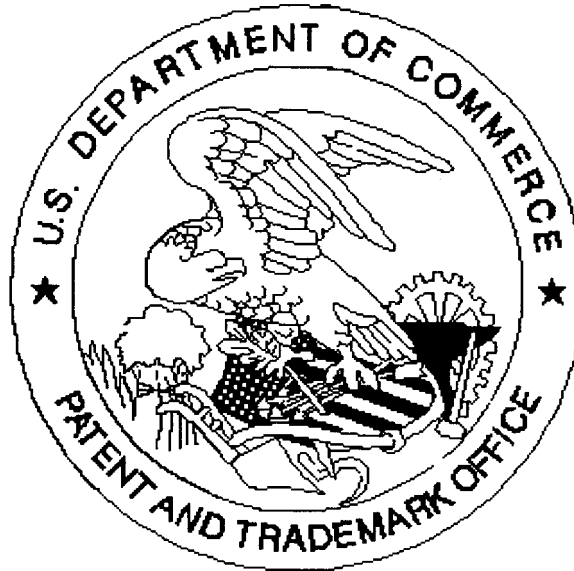
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L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date

09700712-44301
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☐ Page(s) _____ of _____ were not present
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